

Amendments to the Specification:

Please replace paragraph [0005] on page 2 with the following replacement paragraph:

[0005] As used herein the term "row" means a ~~series~~ grouping of aligned bristle tufts ~~that are either helically oriented or parallel to the brushroll axis of rotation on a helix.~~

Please replace paragraph [0006] on page 2 with the following paragraph:

[0006] The term "section" means a portion of the brushroll defined by rows of bristle tufts that are rotationally or angularly spaced from the rows of adjacent brushroll sections.

Please delete paragraph [0007] on page 2 which consists of lines 13-16.

[0007] ~~The term "orientation angle" means the position of a row of bristle tufts in relation to the longitudinal axis of the brushroll. In one embodiment, the orientation angle is 0° so that the rows of tufts is parallel to the brushroll axis. In more preferred embodiments, the rows are helically orientated.~~

Please replace paragraph [0009] on page 2 with the following replacement paragraph:

[0009] The term "helix rotation" means the helical twist of a row of bristle tufts about the longitudinal axis of the brushroll ~~from one end of the row to the other end.~~

Please replace paragraph [0010] on page 2 with the following paragraph:

[0010] In accordance with the invention, the new brushroll comprises a

spindle having first and second ends and a longitudinal axis of rotation, and rows of bristle tufts arranged in sections along the length of the spindle with the rows of each section being rotationally or angularly spaced from the rows of adjacent sections. The orientation of the rows of each section and the rotational spacing between rows of adjacent sections form multiple dwell positions during each 360° of brushroll rotation.

Please replace paragraph [0011] on page 2 with the following paragraph:

[0011] The brushroll can have from three to eight sections. The number of rows of tufts in each section can vary, but the most effective dwell positions occur with two rows in each section. The rotative or angular spacing between two rows in a section can range from 160° to 200°, with the most preferred spacing being 180° so that the two rows are ~~rotationally~~ diametrically opposed.

Please replace paragraph [0012] on page 3 with the following paragraph:

[0012] The rotational or angular spacing between the rows of tufts of adjacent sections can also vary. According to one embodiment of the invention, the rows of tufts are helically oriented and extend in the same helix direction. In this embodiment, the helix rotation of the rows and the rotational spacing between the last tufts of one section and the first tufts of the adjacent section form a dwell position extending the length of the brushroll every 90° of rotation. In another embodiment, the rows of tufts along one-half of the brushroll extend in one helix direction, while the rows of tufts along the other one-half of the brushroll extend in a reverse helix direction. The helix rotation of the rows and the rotational spacing

between the last end tufts of one section and the first end tufts of the adjacent section form a dwell position along one-half the brushroll length every 90° of rotation ~~and the first tufts of the adjacent section form a dwell position extending the length of the brushroll every 90° of rotation.~~

Please delete paragraph [0029] on page 4 which consists of line 10:

[0029] ~~Fig. 14 is a plan view of still another embodiment of the invention.~~

Please delete paragraph [0030] on page 4 which consists of lines 11-12:

[0030] ~~Fig. 15 is a schematic layout of the embodiment of Fig. 14 showing it in an unrolled condition.~~

Please replace paragraph [0032] on pages 4-5 with the following replacement paragraph:

[0032] The bristle tufts 20 in each quadrant 21-24 are arranged in two helically oriented rows of rotationally opposed tufts spaced 180° apart. The rows in each section 21-24 are helically oriented and each have a helix rotation of about 18° from one end to the other end. The rows in quadrant 21 are designated by reference numeral 30, the rows in quadrant 22 by reference numeral 31, the rows in quadrant 23 by reference numeral 32, and the rows in quadrant 24 by reference numeral 33. Each of the rows 30 has seven tufts, each of the rows 31 has nine tufts, each of the rows 32 has ten tufts, and each of the rows 33 has seven tufts. There are two reversely angled tufts 34 at the ends of each row 30 adjacent the end 12 and an offset tuft 35 adjacent each end of the rows 33 near the end 13. The tufts

34, 35 are conventional and serve to inhibit threads and other debris from entering the bearings (not shown) ~~before~~ of the brushroll during use.

Please replace paragraph [0033] on page 5 with the following replacement paragraph:

[0033] It will be seen from Figs. 1 and 2 that the rows of tufts in each of the quadrants 21 - 24 are rotationally spaced from the rows of adjacent sections. As shown most clearly in Fig. 2, beginning at the end 12 of the brushroll 10 and continuing towards the other end 13, the first tuft 31a of one row 31 is rotationally spaced about 72° 108° from the last tuft ~~of row~~ 30a of one row 30 and about ~~108°~~ 72° from the last tuft 30b of the other row 30. Similarly, the first tuft 31b of the other row 31 is rotationally spaced about 108° from the last tuft 30b and about 72° from the last tuft 30a. The last tufts of rows 31 in quadrant 22 are each rotationally spaced about 90° from the first tufts of rows 32 in quadrant 23. The last tufts in rows 32 are spaced from the first tufts in rows 33 in the same manner as the spacing between rows 30, 31.

Please replace paragraph [0034] on page 5 with the following replacement paragraph:

[0034] If desired, the quadrants 21-24 may be spaced apart axially of the brushroll 10 in order to accommodate cord savers and a belt guard. Some vacuum sweepers have sole plates provided with transverse strips or bars extending from one side of the nozzle opening to the other in order to prevent the sweeper cord from wrapping around the spindle during use. Sweepers may also have a

pulley belt guard in the form of a plate extending transversely across the nozzle from one side to the other. As illustrated in Figs. 1 and 2, the adjacent end tufts of rows 30, 31 in quadrants 21, 22 are spaced apart axially of the spindle to accommodate a cord saver indicated by broken line 40. The adjacent end tufts of rows 32,33 in quadrants 23, 24 are spaced apart to accommodate a cord saver indicated by broken line 41. The adjacent end tufts of rows 31, 32 in quadrants 22, 23 are more widely spaced apart to accommodate a belt guard indicated by broken line 42 ~~43~~. It is to be understood that the axial spacing between end tufts of the adjacent quadrants can be eliminated in the case of sweepers which do not have cord savers and/or belt guards.

Please replace paragraph [0036] on page 6 with the following replacement paragraph:

[0036] When helically oriented bristle tufts are arranged to form a dwell position every 90° of rotation, as in Fig. 1 and 2, the dwell positions are defined by rows of tufts having a minimum rotational spacing of 90° minus the helix rotation. In the specifically described embodiment of Figs. 1 and 2 where the helix rotation is about 18°, the rotational spacing of the rows forming each dwell position, e.g., the minimum rotational or angular spacing between tufts 30a and 30b, is about 72°. The same minimum rotational spacing exists for the dwell positions between lines B and C, C and D, and D and A.

Please replace paragraph [0039] on page 7 with the following replacement paragraph:

[0039] The rows of bristle tufts in the quadrant 55 are designated by reference numeral 60, the rows in quadrant 56 by reference numeral 61, the rows in quadrant 57 by reference numeral 62 and rows in quadrant 58 by reference character 63. At the ends of the rows 60 near the spindle end 52 are two conventional tufts 65 which are similar to the tufts 34 in Figs.1 and 2 , and are provided to guard against threads and other debris from entering the brushroll bearings (not shown). Two similar tufts ~~66~~ 65 are provided at ends of the row 63 near the spindle end 53. The rows 60, 61 extend in one helical direction toward the midpoint of the spindle 51, while the rows 62, 63 extend in a reverse helix direction toward the mid point of the spindle.

Please replace paragraph [0044] on page 8 with the following replacement paragraph:

[0044] The embodiment of the invention illustrated in Figs 11-13 is similar to that of Figs. 1 and 2 except for the number of tufts in the rows and the spacing to accommodate belt guards and a belt guard . In Figs. 11-13, the brushroll is generally indicated by reference numeral 80. The brushroll 80 includes a spindle 81 having a first end 82, a second end 83 and a axis of rotation 84. Bristle tufts on the spindle 81 are arranged to define four quadrants ~~85-93~~ 88. The tufts in each quadrant form two helically orientated rows rotationally spaced 180° apart. The two rows in quadrant 85 are indicated by reference numeral 90, the two rows in quadrant 86 by reference character 91, the two rows in quadrant ~~57~~ 87 by reference character 92, and the two rows in quadrant 88 by reference character 93. At the ends of the

rows 90 adjacent the end 82, are two conventional tufts 95 similar to the previously described tufts 34 in the embodiment of Fig. 1 and 2. Another conventional tuft 95 is provided at the ends of each row 93 adjacent the spindle end ~~84~~ 83. The tufts 94 95 are similar to the tufts 35 in the embodiment of Figs. 1 and 2.

Please delete paragraphs [0049] and [0050] on pages 9 and 10.

[0049] ~~References is made to Fig. 14 and 15 which illustrate another embodiment of the invention comprising a brushroll 110 having a spindle 111 with a first end 112 a second end 113 and a longitudinal axis of rotation 114. The bristle tufts on the spindle 111 define six sections 115-120 along the length of the spindle. The bristle tufts in each section form two rows of rotationally opposed tufts spaced 180° apart. All rows are parallel to the longitudinal axis 114. As illustrated, there are four tufts in the rows 121 of section 115. There are eight tufts in the rows 122 of section 116. There are five tufts in the two rows 123 of section 87, seven tufts in the rows 124 of section 118, six tufts in the rows 125 of section 119, and four tufts in the rows 126 of section 120. A conventional angled tuft 124 is provided at the end of each row 121, and two conventional, angled tufts 128 are provided at the ends of each row 126. The parallel rows of each section 115-120 are rotationally spaced from the rows in adjacent sections. As illustrated, each row 122 of section 116 is rotationally spaced 60° from one row 121 and 120° from the other row 121. The rotational spacing between the rows of adjacent sections 116, 117, adjacent sections 117, 118, adjacent sections 118, 119 and adjacent sections 119, 120 are the same as the spacings between the rows 121, 122. That is to say, the rotational~~

~~spacing between rows of adjacent sections is 60° and 120°.~~

[0050] ~~The parallel rows and angular spacing between the rows of adjacent sections provide dwell positions every 60° of brushroll rotation. Referring to Fig 15, a first dwell position is bounded by the rows 121,124 on line A and the rows 122,125 above line B. A second dwell position is bounded by the rows 121, 125 above line B and the rows 123, 126 below line B. A third dwell position exists above the rows 121, 124 on lines C and below the rows 123, 126. A third dwell position exists above the rows 121, 124 on line C and below the rows 123,126. A fourth dwell position extends along the brushroll below the rows 121,124 on line C and above the rows 122,125. A fifth dwell position exists along the spindle below the rows 112, 125 above line D and the rows 123, 126 below line D. A sixth dwell position exists between the rows 123,126 below line D and the rows 121, 124 on line A.~~